AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Original) A diagnostic system for a compressor assembly including a compressor and a motor protector, said system comprising logic circuitry associated with the motor protector and operable to analyze a status of the motor protector as a function of time and identify a specific fault cause.

2. (Original) The diagnostic system of Claim 1, further comprising a demand signal sensor, wherein said logic circuitry is associated with said demand signal sensor.

3. (Original) The diagnostic system of Claim 2, further comprising a current sensor, wherein said logic circuitry is associated with said current sensor.

4. (Original) The diagnostic system according to Claim 2, wherein said demand signal sensor monitors a supply voltage.

5. (Original) The diagnostic system according to Claim 2, wherein said demand signal sensor is in communication with a system controller supplying a signal indicating demand.

6. (Previously Presented) The diagnostic system according to Claim 3, further comprising an indicator associated with said logic circuitry, said indicator receiving a signal from said logic circuitry to indicate a fault based on said current and demand signal.

7. (Original) The diagnostic system according to Claim 6, wherein said indicator is a plurality of lights indicating the presence or absence of a fault condition.

8. (Original) The diagnostic system according to Claim 1, wherein said logic circuitry is operable to output a coded sequence of electrical pulses to identify said specific fault cause.

9. (Original) The diagnostic system according to Claim 1, wherein said logic circuitry is operable to analyze said operating condition and identify a specific fault cause while the compressor is operating.

10. (Original) A method for diagnosing a compressor assembly including a compressor and a motor protector, said method comprising:

analyzing a status of the motor protector as a function of time; and

identifying a compressor fault cause based on said analyzing.

11. (Original) The method according to Claim 10, further comprising:

sensing a demand signal;

sensing a current; and

analyzing said sensed demand signal and said current.

12. (Original) The method according to Claim 11, wherein said identifying a compressor fault cause includes indicating a specific fault cause based on said sensed current and demand signal.

13. (Original) The method according to Claim 10, wherein said identifying includes outputting a coded sequence of electrical pulses to identify a specific fault cause.

14. (Original) The method according to Claim 10, wherein said identifying occurs while the compressor is operating.

15. (Previously Presented) The diagnostic system according to Claim 1, further comprising an indicator associated with said logic circuitry, said indicator receiving a signal from said logic circuitry to indicate a fault.